ACOUSTICAL SITE ASSESSMENT
LAS MANSIONES DE BONITA – SAN DIEGO, CA

Submitted to:

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The County of San Diego

ISE Project #07-052

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EXECUTIVE SUMMARY

This acoustical site assessment analyzes the 6.16 gross acre project site located in the County of San Diego, California. The proposed development plan calls for the construction of 5 residential dwelling units. Our findings indicate that a proposed mitigation plan consisting of two six-foot-high noise walls would be adequate to mitigate noise levels under the County's noise thresholds. Additionally, ISE determined that the unmitigated 60 dBA CNEL noise contour would be roughly 137-feet from the Sweetwater Road centerline.

INTRODUCTION AND DEFINITIONS

Existing Site Characterization

The project site consists of approximately 6.16 gross acres located in the County of San Diego, California. The project site is located on both the east and west side of Tennis Court Lane and is bordered to the south by Sweetwater Road. Sweetwater Road via Interstate 805 (I-805) provides regional access to the project area as can be seen in Figure 1 below.

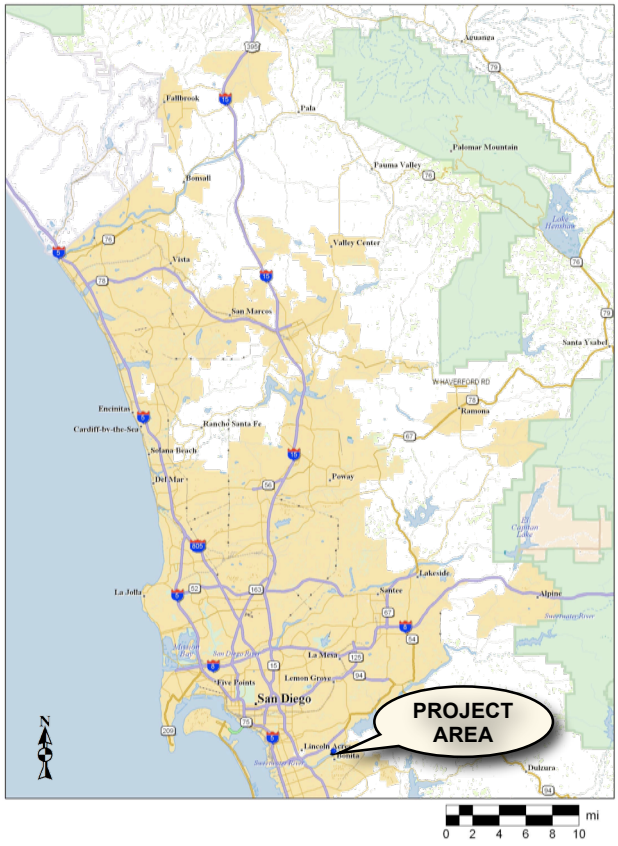

FIGURE 1: Project Vicinity Map (ISE 9/07)

The project site currently resides as a vacated development with mostly disturbed open space onsite. Elevations across the entire property range from approximately 115 to 135 feet above mean sea level (MSL). A project site map with topography is shown below in Figure 2.

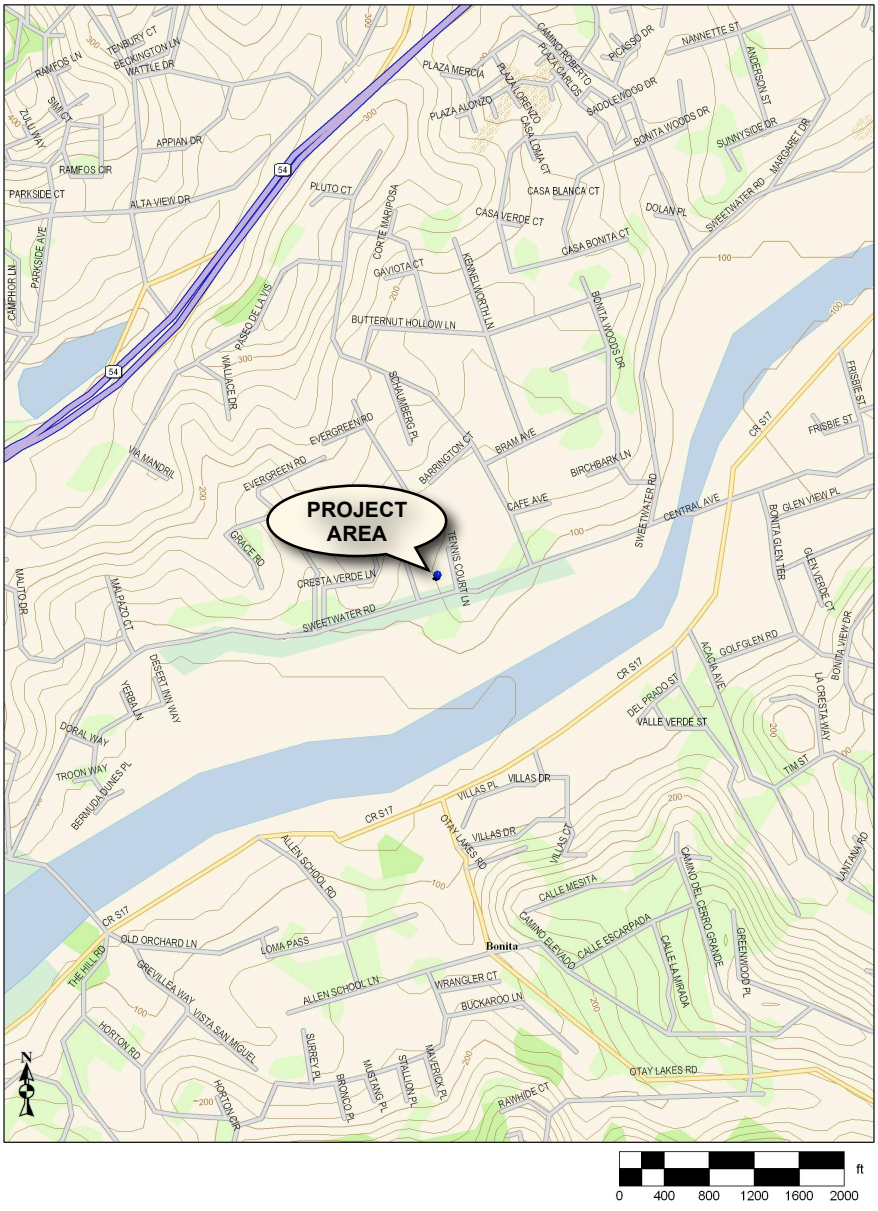

FIGURE 2: Project Site Location Map w/ Topography (ISE 9/07)

Project Description

The proposed development plan calls for the construction of 5 residential dwelling units within the County of San Diego. The proposed site development plan can be seen in Figure 3 below.

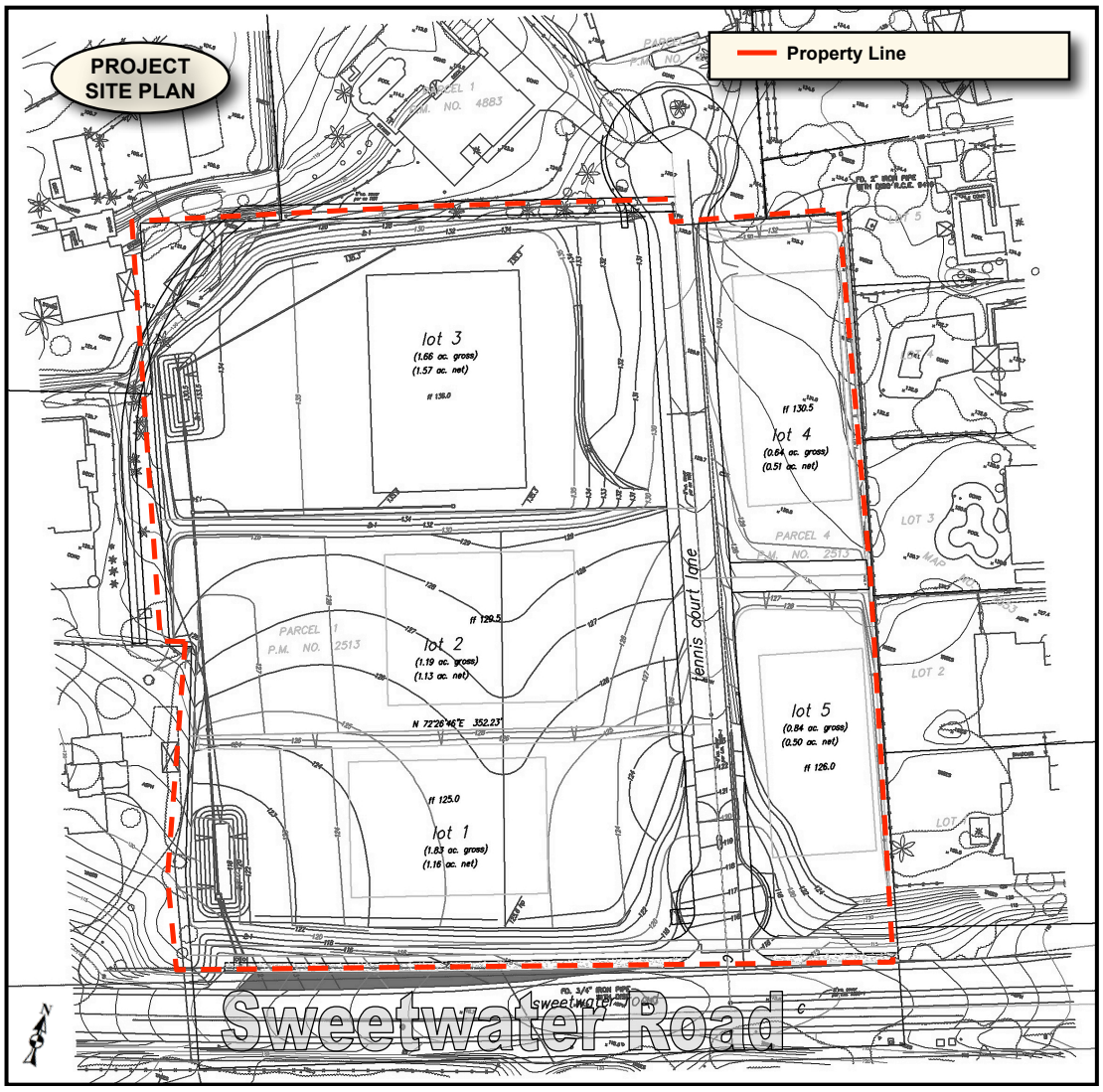

FIGURE 3: Proposed Site Plan – Las Mansiones de Bonita (Stuart Engineering 5/07)

Acoustical Definitions

Sound waves are linear mechanical waves. They can be propagated in solids, liquids, and gases. The material transmitting such a wave oscillates in the direction of propagation of the wave itself. Sound waves originate from some sort of vibrating surface. Whether this surface is the vibrating string of a violin or a person's vocal cords, a vibrating column of air from an organ or clarinet, or a vibrating panel from a loudspeaker, drum, or aircraft, the sound waves generated are all similar. All of these vibrating elements alternatively compress the surrounding air on a forward movement and expand it on a backward movement.

There is a large range of frequencies within which linear waves can be generated, sound waves being confined to the frequency range that can stimulate the auditory organs to the sensation of hearing. For humans this range is from about 20 Hertz (Hz or cycles per second) to about 20,000 Hz. The air transmits these frequency disturbances outward from the source of the wave. Sound waves, if unimpeded, will spread out in all directions from a source. Upon entering the auditory organs, these waves produce the sensation of sound. Waveforms that are approximately periodic or consist of a small number of periodic components can give rise to a pleasant sensation (assuming the intensity is not too high), for example, as in a musical composition.

Noise, on the other hand, can be represented as a superposition of periodic waves with a large number of components and is generally defined as unwanted or annoying sound that is typically associated with human activity and which interferes with or disrupts normal activities. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance of the noise and its appropriateness in the setting, the time of day, and the sensitivity of the individual hearing the sound.

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric levels. The loudest sounds that the human ear can hear comfortably are approximately one trillion (or $1x10^{12}$) times the acoustic energy that the ear can barely detect. Because of this vast range, any attempt to represent the acoustic intensity of a particular sound on a linear scale becomes unwieldy. As a result, a logarithmic ratio originally conceived for radio work known as the decibel (dB) is commonly employed[1].

A sound level of zero “0” dB is scaled such that it is defined as the threshold of human hearing and would be barely audible to a human of normal hearing under extremely quiet listening conditions. Such conditions can only be generated in anechoic or “dead rooms”. Typically, the quietest environmental conditions (extreme rural areas with extensive shielding) yield sound levels of approximately 20 decibels. Normal speech

[1] A unit used to express the intensity of a sound wave. This level is defined as being equal to 20 times the common logarithm of the ratio of the pressure produced by a sound wave of interest to a ‘reference’ pressure wave (which is defined as 1 micro Pascal measured at a distance of 1 meter).

has a sound level of approximately 60 dB. Sound levels above 120 dB roughly correspond to the threshold of pain.

The minimum change in sound level that the human ear can detect is approximately 3.0 dBA[2]. A change in sound level of 10 dB is usually perceived by the average person as a doubling (or halving) of the sounds loudness[3]. A change in sound level of 10 dB actually represents an approximate 90 percent change in the sound intensity, but only about a 50 percent change in the perceived loudness. This is due to the nonlinear response of the human ear to sound.

As mentioned above, most of the sounds we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies differing in sound level. The intensities of each frequency add to generate the sound we hear. The method commonly used to quantify environmental sounds consists of determining all of the frequencies of a sound according to a weighting system that reflects the nonlinear response characteristics of the human ear. This is called "A" weighting, and the decibel level measured is called the A-weighted sound level (or dBA). In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve.

Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of sounds from distant sources that create a relatively steady background noise in which no particular source is identifiable. For this type of noise, a single descriptor called the Leq (or equivalent sound level) is used. Leq is the energy-mean A-weighted sound level during a measured time interval. It is the 'equivalent' constant sound level that would have to be produced by a given source to equal the average of the fluctuating level measured. For most acoustical studies, the monitoring interval is generally taken as one-hour and is abbreviated *Leq-h*.

To describe the time-varying character of environmental noise, the statistical noise descriptors L10, L50, and L90 are commonly used. They are the noise levels equaled or exceeded during 10 percent, 50 percent, and 90 percent of a stated time. Sound levels associated with the L10 typically describe transient or short-term events, while levels associated with the L90 describe the steady state (or most prevalent) noise conditions. In addition, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the maximum and minimum measured sound level (Lmax and Lmin) indicators. The Lmin value obtained for a particular monitoring location is often called the *acoustic floor* for that location.

Finally, another sound measure employed by the State of California and the County of San Diego is known as the Community Noise Equivalence Level (CNEL) is defined as the "A" weighted average sound level for a 24-hour day. It is calculated by adding a 5-decibel penalty to sound levels in the evening (7:00 p.m. to 10:00 p.m.), and

[2] Every 3 dB equates to a 50% of drop (or increase) in wave strength, therefore a 6 dB drop/increase = a loss/increase of 75% of total signal strength and so on.

[3] This is a subjective reference based upon the nonlinear nature of the human ear.

a 10-decibel penalty to sound levels in the night (10:00 p.m. to 7:00 a.m.) to compensate for the increased sensitivity to noise during the quieter evening and nighttime hours.

APPLICABLE SIGNIFICANCE CRITERIA

Vehicular/Transportation Noise Impact Thresholds

Transportation noise levels, such as those produced by vehicles traveling to and from the project site, are governed under Policy 4b of the *County of San Diego's Noise Element of the County's General Plan (as revised 7/06)*. The relevant sections of the Noise Element are cited below:

> Because exterior community noise equivalent levels (CNEL) above 60 decibels and/or interior CNEL above 45 decibels may have an adverse effect on public health and welfare, it is the policy of the County of San Diego that:
>
> 1. Whenever it appears that new *development* may result in any (existing or future) *noise sensitive land use* being subject to noise levels of CNEL equal to 60 *decibels (A)* or greater, an acoustical analysis shall be required.
> 2. If the acoustical analysis shows that noise levels at any *noise sensitive land use* will exceed CNEL equal to 60 decibels, modifications shall be made to the *development* which reduce the *exterior noise* level to less than CNEL of 60 *decibels (A)* and the *interior noise* level to less than CNEL of 45 *decibels (A)*[4].
> 3. If modifications are not made to the *development* in accordance with paragraph 2 above, the *development* shall not be approved unless a finding is made that there are specifically identified overriding social or economic considerations which warrant approval of the development without such modification; provided, however, if the acoustical study shows that sound levels for any noise sensitive land use will exceed a CNEL equal to 75 *decibels (A) even* with such modifications, the *development* shall not be approved irrespective of such social or economic considerations.
>
> Definitions, Notes and Exceptions
>
> *"Decibels (A)"* refers to A-weighted sound levels as noted on page VIII-2 within the Element.
>
> *"Development"* means any physical development including but not limited to residences, commercial, or industrial facilities, roads, civic buildings, hospitals, schools, airports, or similar facilities.

[4] **Action Program 4b1:** Recommend programs to soundproof buildings or redevelop areas where it is impossible to reduce existing source noise to acceptable levels.

Action Program 4b2: Study the feasibility of extending the application of Section 1092, California Administrative Code dealing with noise insulation standards to single-family dwellings, and incorporating higher standards for reduction of exterior noise intrusion into structures.

Action Program 4b3: Require present and projected noise level data to be included in Environmental Impact Reports. Designs to mitigate adverse noise impacts shall also be used.

"*Exterior noise*":

(a) For single family detached dwelling projects, "exterior noise" means noise measured at an outdoor living area which adjoins and is on the same lot as the dwelling, and which contains at least the following minimum area:

(i) Net lot area up to 4,000 sq. ft.:	400 square feet.
(ii) Net lot area 4,000 sq. ft. to 10 ac.:	10% of net lot area.
(iii) Net lot area over 10 ac.:	1 ac.

(b) For all other projects, "exterior noise" means noise measured at all exterior areas, which are provided for group or private usable, *open space* purposes.

(c) For County road construction projects, the exterior noise level due to vehicular traffic impacting a noise sensitive area should not exceed the following values:

(i) Federally funded projects: The Noise standard contained in applicable Federal Highway Administration Standards.

(ii) Other projects: 60 *decibels (A),* except if the existing or projected noise level without the project is 58 decibels (*A*) or greater, a 3 *decibel* (*A*) increase is allowed, up to the maximum permitted by Federal Highway Administration Standards.

"Group or Private Usable Open Space" shall mean: Usable open space intended for common use by occupants of a development, either privately owned and maintained or dedicated to a public agency, normally including swimming pools, recreation courts, patios, open landscaped areas, and greenbelts with pedestrian walkways and equestrian and bicycle trails, but not including off-street parking and loading areas or driveways (Group Usable Open Space); and usable open space intended for use of occupants of one dwelling unit, normally including yards, decks and balconies (Private Usable Open Space).

"Interior noise": The following exception shall apply: For rooms which are usually occupied only a part of the day (schools, libraries, or similar), the interior one-hour average sound level, due to noise outside, should not exceed 50 *decibels (A)*.

"Noise sensitive land use" means any residence, hospital, school, hotel, resort, library or any other facility where quiet is an important attribute of the environment.

State of California CCR Title 24 Noise Insulation Standards

The California Code of Regulations (CCR), Title 24, Noise Insulation Standards, states that multi-family dwellings, hotels, and motels located where the CNEL exceeds 60 dBA, must obtain an acoustical analysis showing that the proposed design will limit interior noise to less than 45 dBA CNEL. Interior noise standards are typically applied to sensitive areas within the structure where low noise levels are desirable (such as living rooms, dining rooms, bedrooms, and dens or studies).

Worst-case noise levels, either existing or future, must be used for this determination. Future noise levels must be predicted at least ten years from the time of building permit application. The County of San Diego has adopted the CCR Title 24 standards as part of their Policy 4b implementation.

ANALYSIS METHODOLOGY

Existing Conditions Field Survey

A Quest Model 2900 ANSI Type 2 integrating sound level meter was used as the data collection device. The meter was mounted to a tripod five feet above ground level in order to simulate the noise exposure of an average-height human being. Two short-term sound level measurements were taken on the proposed site as described below.

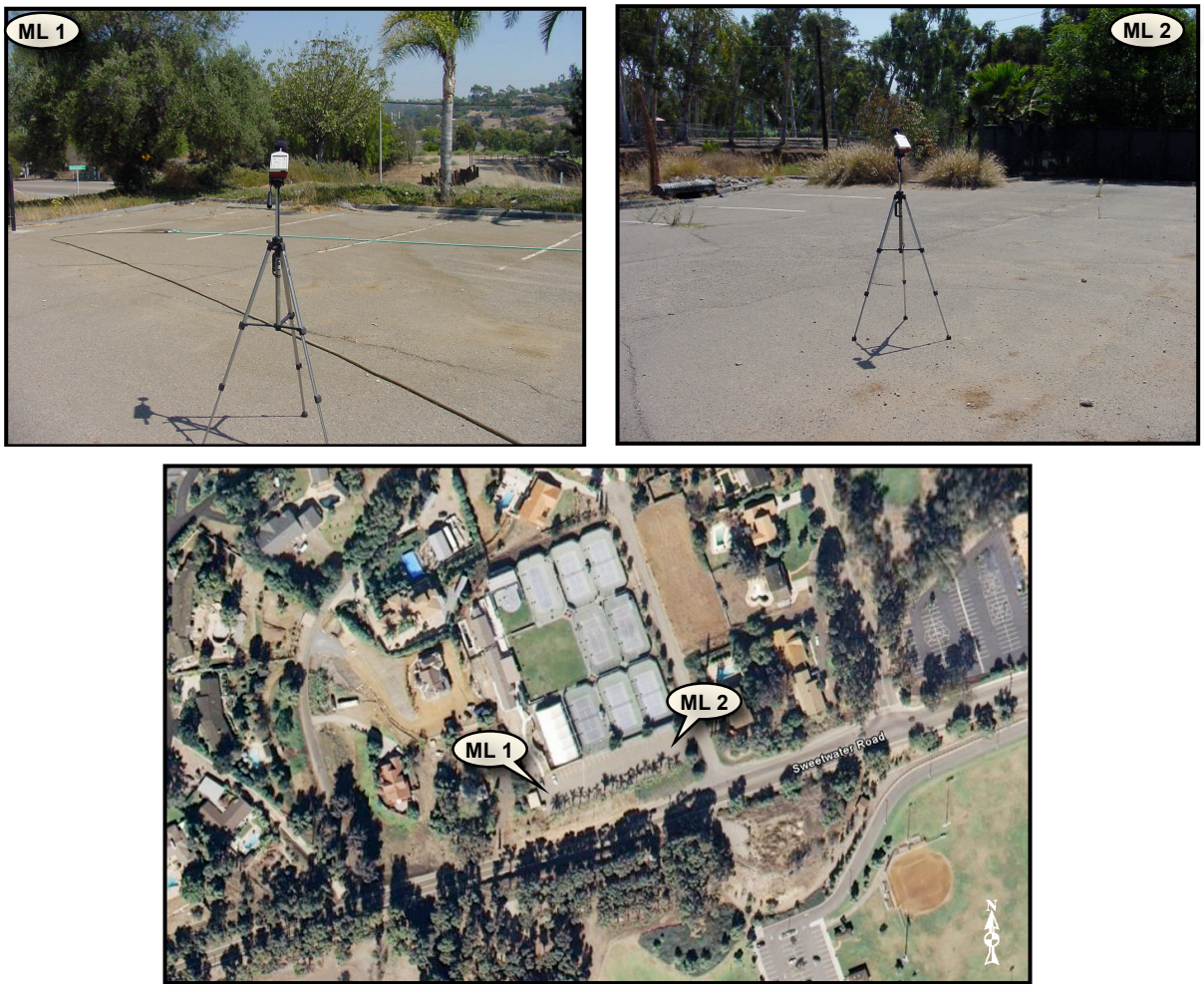

FIGURE 4: Ambient Onsite Monitoring Locations – Las Mansiones de Bonita (ISE 09/07)

The first meter location (ML 1) was located in the southwestern portion of the site roughly 105 feet north of Sweetwater Road. The second meter location (ML 2) was in the southeastern portion of the site roughly 105 feet north of Sweetwater Road (refer to Figure 4 below). The monitoring was done in this manner in order to obtain an estimate of the worst-case existing onsite noise during normal daytime traffic conditions.

The measurements were performed on August 22, 2007. All monitoring sites were spatially logged using a geographic positioning system (GPS) in order to maintain horizontal and vertical control. All equipment was calibrated before testing at ISE's acoustics and vibration laboratory to verify conformance with ANSI S1-4 1983 Type 2 and IEC 651 Type 2 standards.

Traffic Noise Impact Assessment Approach

The *Traffic Noise Model version 2.5* (TNM 2.5) based on FHWA-PD-96-010 and FHWA/CA/TL-87/03 standards was used to calculate future onsite vehicular traffic noise levels. These components are supported by a scientifically founded and experimentally calibrated acoustic computation methodology. The database is made up of over 6,000 individual pass-by events measured at forty sites across the country. Currently TNM 2.5 is the only noise-modeling program accepted by Caltrans for use within the State of California.

The County's Noise Element specifies that 10% of the net lot area per parcel must comply with the County's exterior useable area criterion of 60 dBA CNEL for parcels larger than 4,000 sq. ft. but smaller than 10 acres; the proposed project would fall under these standards having a minimum designated area of 32,200 sq. ft. No designed structures have been specified within the tentative map; therefore designed useable areas cannot be identified. Therefore, ISE selected four modeled receptor locations per lot in order to create a justifiable representation of the general sound levels across each lot.

Receptor elevations were considered five feet above the appropriate floor (pad) elevation and were taken near the edge and center of the proposed lot (i.e., within all Noise Sensitive Areas, NSA's) and building facades closest to Sweetwater Road. Second floor receptor areas were modeled at 15 feet above the respective pad elevation. The receptor locations can be seen in Figure 5 on the following page. The TNM model input and output files required for the analysis is provided at the end of this technical report.

Input to the acoustical model includes the following:

- A digitized representation of all affected roadways (i.e., *Future* Sweetwater Road).
- Future Average Daily Trips (ADTs) for nearby major roadways.[5]
- A 94/4/2 (automobiles/medium/heavy) traffic mix in accordance with CALTRANS.
- A peak hour traffic percentage of 10% of the ADT.[6]
- Receptor and topographic elevations as identified in the project site plans.[7]

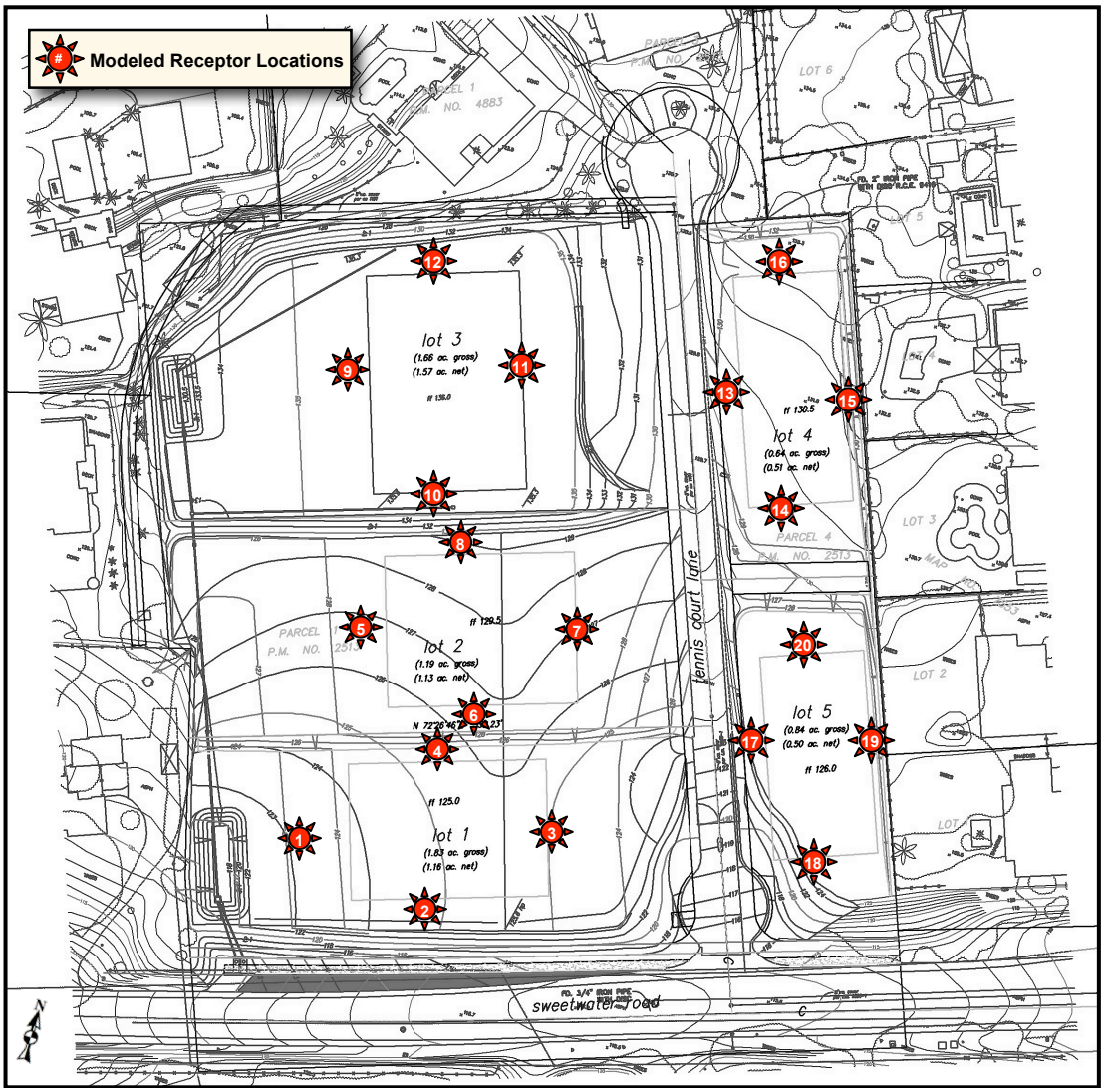

FIGURE 5: Modeled Receptor Locations for Las Mansiones de Bonita (ISE 9/07)

[5] Source: *SANDAG Series 10 – 2030 Enhanced Traffic Prediction Model.*

[6] For values between approximately 8 and 12 percent, the energy-mean A-weighted sound level is equivalent to the CNEL. Outside this range, a maximum variance of up to two dBA occurs between Leq-h and CNEL.

[7] Source: Stuart Engineering 5/07.

FINDINGS / RECOMMENDATIONS

Ambient Sound Measurement Results

Testing conditions during the monitoring period were sunny with an average barometric pressure reading of 29.78 in-Hg, an average westerly wind speed of 7 miles per hour (MPH) and an approximate mean temperature of 79 degrees Fahrenheit. The results of one-hour sound level monitoring are shown in Table 1 below. The values for the energy equivalent sound level (Leq), the maximum and minimum measured sound levels (Lmax and Lmin), and the statistical indicators L10, L50, and L90, are given for each monitoring location.

TABLE 1: Measured Ambient Sound Levels – Las Mansiones de Bonita

		1-Hour Noise Level Descriptors in dBA					
Site	**Start Time**	**Leq**	**Lmax**	**Lmin**	**L10**	**L50**	**L90**
ML 1	3:00 p.m.	50.6	62.6	43.2	53.6	49.3	44.7
ML 2	4:01 p.m.	49.9	58.6	42.7	52.7	48.6	45.4

Monitoring Location:

- ML 1: Southwestern portion of project site facing Sweetwater Road.
  GPS: 32°40.011'N x 117°01.852'W, EPE 13 ft.
- ML 2: Southeastern portion of project site facing Sweetwater Road.
  GPS: 33°40.021'N x 117°01.810'W, EPE 13 ft.

Measurements performed by ISE on August 22. EPE = Estimated Position Error.

Measurements collected at the monitoring locations ML 1 and ML 2 reflect the typical sound levels associated with the community setting with existing adjacent major roadway activities. The hourly average sound levels (or Leq-h) recorded over the monitoring period ranged between 50 and 51 dBA. The dominant noise source was observed to be surface road traffic.

As indicated by the monitoring equipment, at least 90 percent of the time (L90) he onsite sound levels at ML 1 and ML 2 was approximately 45 dBA. The acoustic floor for the site, as seen by the Lmin indicator was found to be approximately 43 dBA. This would be considered the lowest attainable sound levels for the project area near Sweetwater Road during daytime hours.

Future Traffic Noise Impacts

The primary sources of future traffic noise near the project site would be from Sweetwater Road. Future traffic estimates for these roadways predict volumes for Sweetwater Road as high as 11,000 ADT (*Source: SANDAG Series 10 - 2030 Enhanced Traffic Volume Forecast*).

ISE speed survey was done on these segments and the 85th percentile speed is 47 MPH (RCE engineering, October 2006). ISE modeled Sweetwater Road at at 50 MPH to be conservative. *California Manual on Uniform Traffic Control Devices* (dated September 26, 2006) as authorized by the California Department of Transportation (CALTRANS) and must be set to within the nearest 5 MPH increment of the 85th percentile speed.

The results of the acoustical modeling for the selected lots are shown below in Table 2. The table output shows the unmitigated and mitigated noise sensitive area sound, as well as the resultant second floor sound levels. All noise sensitive areas which exceed the County's 60 dBA CNEL noise threshold would require noise mitigation. These areas are identified in red text.

TABLE 2: Predicted Transportation Noise Levels – Las Mansiones de Bonita

Modeled Receptor No.	Corresponding Lot #	Unmitigated Sound Levels	Mitigated Sound Levels	2nd Floor Mitigated Sound Levels
1	Lot 1 W Facade	57.1	54.8	59.1
2	Lot 1 S Façade	64.7	57.8	66.2
3	Lot 1 E Façade	59.5	59.2	62.2
4	Lot 1 N Façade	53.6	52.3	57.4
5	Lot 2 W Façade	50.8	50.0	54.6
6	Lot 2 S Façade	55.5	54.8	57.6
7	Lot 2 E Façade	53.7	53.5	56.1
8	Lot 2 N Façade	48.0	47.3	53.1
9	Lot 3 W Façade	47.2	46.7	50.5
10	Lot 3 S Façade	50.8	50.3	53.0
11	Lot 3 E Façade	47.9	47.4	50.6
12	Lot 3 N Façade	46.3	45.8	48.7
13	Lot 4 W Façade	47.1	47.0	50.4
14	Lot 4 S Façade	49.1	48.9	52.1
15	Lot 4 E Facade	45.5	45.4	50.2
16	Lot 4 N Façade	42.2	42.3	47.6
17	Lot 5 W Façade	57.4	57.0	59.1
18	Lot 5 S Façade	63.2	53.7	64.7
19	Lot 5 E Façade	53.5	53.3	55.3
20	Lot 5 N Facade	51.1	51.1	53.1

All levels given in dBA CNEL

A proposed mitigation plan consisting of two six-foot-high walls was examined and found to be adequate to mitigate noise levels under the County's noise thresholds. The recommended placement of these wall segments is shown in Figure 6 on the following page. Additionally, unobstructed (i.e. without structural barriers) noise contours for both 1st and 2nd floor areas is shown is shown in Figure 7 on Page 15 of this report.

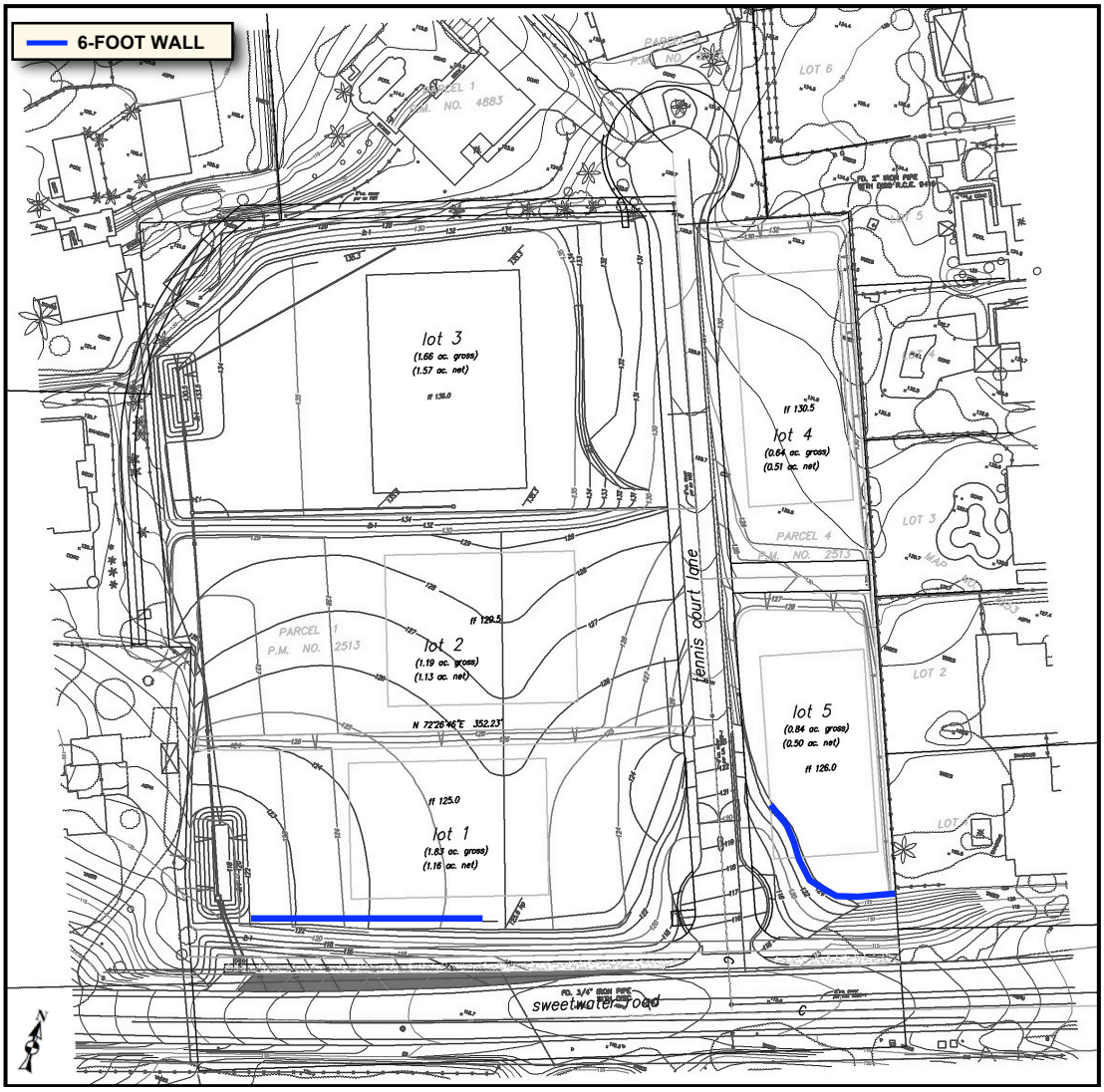

FIGURE 6: Proposed Mitigation Plan – Las Mansiones de Bonita (ISE 9/07)

The six-foot-high walls should run along the proposed top-of-slope of the southern property line of proposed Lots 1 and 5 facing Sweetwater Road (refer to Figure 6 above). The wall should be of solid construction (i.e., such as block or glass or a combination of these materials).

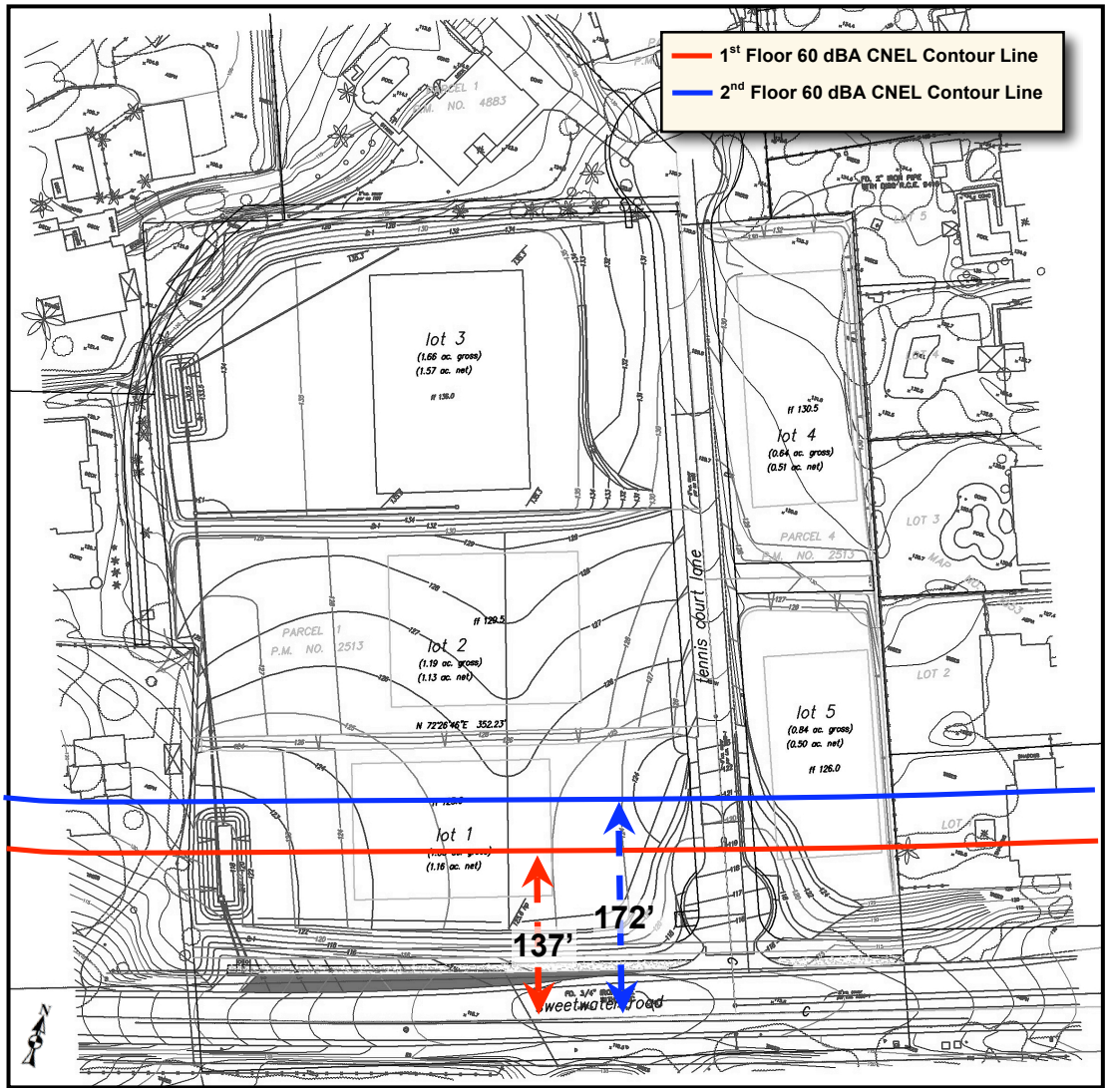

FIGURE 7: Unobstructed 60 Contours for Ground Floor from Sweetwater Road (ISE 9/07)

Finally, it should be noted that structures within the 60 dBA CNEL contour line would exceed the CCR Title 24, Noise Insulation Standards as well as Policy 4b interior noise standards and thus would need to be further analyzed in order to demonstrate that the 45 dBA CNEL interior noise threshold can be attained. Once the project building {architectural} plans are complete, final recommendations can be made in order to ensure these thresholds are met. It should be noted that these requirements would only be required for two story structures on either lots 1 or -5

CERTIFICATION OF ACCURACY AND QUALIFICATIONS

This report was prepared by Investigative Science and Engineering, Inc. (ISE) located at 16486 Bernardo Center Drive, Suite 278, San Diego, CA 92128. The members of its professional staff contributing to the report are listed below:

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ISE affirms to the best of its knowledge and belief that the statements and information contained herein are in all respects true and correct as of the date of this report. Should the reader have any questions regarding the findings and conclusions presented in this report, please do not hesitate to contact ISE at (858) 451-3505.

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Approved as to Form and Content:

Rick Tavares, Ph.D.
Project Principal
Investigative Science and Engineering, Inc.

Attachments to this report: *Traffic Forecasts*
TNM 2.5 Model Input/ Output Decks

SAN DIEGO REGIONAL TRAFFIC FORECAST
VEHICLE TRIP GENERATION AND LAND USE BY ZONE - YEAR: 2030
TRAFFIC ANALYSIS ZONE : 4067

LU Code	Description	Type	Amount	Trips
101	SINGLE FAMILY	du	321	3022
4112	RIGHT-OF-WAY	acre	57.8	0
4113	COMMUNICATION OR UTILITY	acre	1.6	5
6102	CHURCH	acre	3.3	140
7210	OTHER RECREATION	acre	4	23
9101	INACTIVE USE	acre	31.2	0
	TOTAL		0	3190

Source: San Diego Association of Governments Traffic Forecast, January 2006

SAN DIEGO REGIONAL TRAFFIC FORECAST
VEHICLE TRIP GENERATION AND LAND USE BY ZONE - YEAR: 2030
TRAFFIC ANALYSIS ZONE : 4131

LU Code	Description	Type	Amount	Trips
101	SINGLE FAMILY	du	81	721
102	MULTI-FAMILY	du	158	974
4112	RIGHT-OF-WAY	acre	17.2	0
6002	LOW RISE OFFICE	acre	2.6	579
6109	OTHER PUBLIC SERVICE	acre	0.2	43
7204	GOLF COURSE	acre	123.1	0
7205	GOLF CLUB HOUSE	site	1	559
7601	ACTIVE PARK	acre	64.7	3554
9101	INACTIVE USE	acre	3.1	0
	TOTAL		0	6430

Source: San Diego Association of Governments Traffic Forecast, January 2006

ISE
Case van Genuchten

20 December 2007
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 07-052 Las Mansiones
RUN: 1st Floor Unmitigated
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Lot 1 W	2	1	0.0	56.1	66	56.1	10	----	56.1	0.0	8	-8.0
Lot 1 S	3	1	0.0	63.5	66	63.5	10	----	63.5	0.0	8	-8.0
Lot 1 E	4	1	0.0	58.4	66	58.4	10	----	58.4	0.0	8	-8.0
Lot 1 N	5	1	0.0	52.7	66	52.7	10	----	52.7	0.0	8	-8.0
Lot 2 W	6	1	0.0	50.0	66	50.0	10	----	50.0	0.0	8	-8.0
Lot 2 S	7	1	0.0	54.4	66	54.4	10	----	54.4	0.0	8	-8.0
Lot 2 E	8	1	0.0	52.7	66	52.7	10	----	52.7	0.0	8	-8.0
Lot 2 N	9	1	0.0	47.3	66	47.3	10	----	47.3	0.0	8	-8.0
Lot 3 W	10	1	0.0	46.4	66	46.4	10	----	46.4	0.0	8	-8.0
Lot 3 S	11	1	0.0	49.8	66	49.8	10	----	49.8	0.0	8	-8.0
Lot 3 E	12	1	0.0	47.1	66	47.1	10	----	47.1	0.0	8	-8.0
Lot 3 N	13	1	0.0	45.5	66	45.5	10	----	45.5	0.0	8	-8.0
Lot 4 W	14	1	0.0	46.8	66	46.8	10	----	46.8	0.0	8	-8.0
Lot 4 S	15	1	0.0	49.0	66	49.0	10	----	49.0	0.0	8	-8.0
Lot 4 E	16	1	0.0	45.5	66	45.5	10	----	45.5	0.0	8	-8.0
Lot 4 N	17	1	0.0	42.1	66	42.1	10	----	42.1	0.0	8	-8.0
Lot 5 W	18	1	0.0	56.5	66	56.5	10	----	56.5	0.0	8	-8.0
Lot 5 S	19	1	0.0	62.0	66	62.0	10	----	62.0	0.0	8	-8.0
Lot 5 E	20	1	0.0	55.7	66	55.7	10	----	55.7	0.0	8	-8.0
Lot 5 N	21	1	0.0	51.9	66	51.9	10	----	51.9	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB

ISE			**20 December 2007**	
Case van Genuchten			**TNM 2.5**	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:	**07-052 Las Mansiones**			
RUN:	**1st Floor Unmitigated**			
Terrain Line	**Points**			
Name	**No.**	**Coordinates (ground)**		
		X	**Y**	**Z**
		ft	ft	ft
Lot 1 Terrain	1	339.0	270.0	124.00
	2	515.1	320.9	124.00
	3	483.0	444.0	124.00
	4	297.0	383.0	124.00
	5	339.0	271.0	124.00
Road Edge	6	234.0	212.0	118.00
	7	328.0	255.0	118.00
	8	536.0	314.0	118.00
	9	694.0	372.0	118.00
	10	800.0	427.0	120.00

ISE 20 December 2007
Case van Genuchten TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: 07-052 Las Mansiones
RUN: 1st Floor Unmitigated

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway		Points					Flow Control			Segment	
Name	Width	Name	No.	Coordinates (pavement) X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Sweetwater Westbound Ln 2	12.0	point12	12	824.0	356.0	110.00				Average	
		point11	11	803.0	350.0	111.00				Average	
		point10	10	758.0	336.0	113.00				Average	
		point9	9	669.0	307.0	115.00				Average	
		point8	8	608.0	288.0	116.00				Average	
		point7	7	603.0	287.0	116.00				Average	
		point6	6	465.0	243.0	115.00				Average	
		point5	5	398.0	222.0	113.00				Average	
		point4	4	331.0	202.0	112.00				Average	
		point3	3	279.0	188.0	111.00				Average	
		point2	2	230.0	174.0	109.00				Average	
		point1	1	199.0	166.0	108.00					
Sweetwater Westbound Ln 1	12.0	point13	13	824.0	342.0	110.00				Average	
		point14	14	803.0	336.0	111.00				Average	
		point15	15	758.0	322.0	113.00				Average	
		point16	16	669.0	293.0	115.00				Average	
		point17	17	608.0	274.0	116.00				Average	
		point18	18	603.0	273.0	116.00				Average	
		point19	19	465.0	229.0	115.00				Average	
		point20	20	398.0	208.0	113.00				Average	
		point21	21	331.0	188.0	112.00				Average	
		point22	22	279.0	174.0	111.00				Average	
		point23	23	230.0	160.0	109.00				Average	
		point24	24	199.0	152.0	108.00					
Sweetwater Eastbound Ln 1	12.0	point36	36	199.0	138.0	108.00				Average	

		point35	35	230.0	146.0	109.00				Average	
		point34	34	279.0	160.0	111.00				Average	
		point33	33	331.0	174.0	112.00				Average	
		point32	32	398.0	194.0	113.00				Average	
		point31	31	465.0	215.0	115.00				Average	
		point30	30	603.0	259.0	116.00				Average	
		point29	29	608.0	260.0	116.00				Average	
		point28	28	669.0	279.0	115.00				Average	
		point27	27	758.0	308.0	113.00				Average	
		point26	26	803.0	322.0	111.00				Average	
		point25	25	824.0	328.0	110.00					
Sweetwater Eastbound Ln 2	12.0	point48	48	199.0	124.0	108.00				Average	
		point47	47	230.0	132.0	109.00				Average	
		point46	46	279.0	146.0	111.00				Average	
		point45	45	331.0	160.0	112.00				Average	
		point44	44	398.0	180.0	113.00				Average	
		point43	43	465.0	201.0	115.00				Average	
		point42	42	603.0	245.0	116.00				Average	
		point41	41	608.0	246.0	116.00				Average	
		point40	40	669.0	265.0	115.00				Average	
		point39	39	758.0	294.0	113.00				Average	
		point38	38	803.0	308.0	111.00				Average	
		point37	37	824.0	314.0	110.00					

ISE 20 December 2007
Case van Genuchten TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: 07-052 Las Mansiones
RUN: 1st Floor Unmitigated

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Lot 1 W	2	1	316.6	331.2	125.00	5.00	0.00	66	10.0	8.0	Y
Lot 1 S	3	1	403.4	306.3	125.00	5.00	0.00	66	10.0	8.0	Y
Lot 1 E	4	1	456.0	376.0	125.00	5.00	0.00	66	10.0	8.0	Y
Lot 1 N	5	1	368.0	401.0	125.00	5.00	0.00	66	10.0	8.0	
Lot 2 W	6	1	294.0	469.0	129.00	5.00	0.00	66	10.0	8.0	
Lot 2 S	7	1	388.0	433.0	129.00	5.00	0.00	66	10.0	8.0	
Lot 2 E	8	1	441.0	506.0	129.00	5.00	0.00	66	10.0	8.0	
Lot 2 N	9	1	357.0	543.0	129.00	5.00	0.00	66	10.0	8.0	
Lot 3 W	10	1	239.0	629.0	136.00	5.00	0.00	66	10.0	8.0	
Lot 3 S	11	1	325.0	568.0	136.00	5.00	0.00	66	10.0	8.0	
Lot 3 E	12	1	357.0	661.0	136.00	5.00	0.00	66	10.0	8.0	
Lot 3 N	13	1	275.0	732.0	136.00	5.00	0.00	66	10.0	8.0	
Lot 4 W	14	1	495.0	677.0	130.00	5.00	0.00	66	10.0	8.0	
Lot 4 S	15	1	554.0	625.0	130.00	5.00	0.00	66	10.0	8.0	
Lot 4 E	16	1	565.0	706.0	130.00	5.00	0.00	66	10.0	8.0	
Lot 4 N	17	1	499.0	780.0	130.00	5.00	0.00	66	10.0	8.0	
Lot 5 W	18	1	572.0	466.0	126.00	5.00	0.00	66	10.0	8.0	Y
Lot 5 S	19	1	636.0	403.0	126.00	5.00	0.00	66	10.0	8.0	Y
Lot 5 E	20	1	646.0	487.0	126.00	5.00	0.00	66	10.0	8.0	Y
Lot 5 N	21	1	586.0	540.0	126.00	5.00	0.00	66	10.0	8.0	

ISE 20 December 2007
Case van Genuchten TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: 07-052 Las Mansiones
RUN: 1st Floor Unmitigated

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht	Perturbs		On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Lot 1	W	0.00	99.99	0.00				0.00	point1	1	338.0	290.0	125.00	0.00	0.00	0	0		
									point2	2	311.0	376.0	125.00	0.00	0.00	0	0		
									point3	3	437.0	417.0	125.00	0.00	0.00	0	0		
									point4	4	465.0	329.0	125.00	0.00	0.00	0	0		
									point5	5	339.0	290.0	125.00	0.00					
Lot 2	W	0.00	99.99	0.00				0.00	point6	6	448.0	459.0	130.00	0.00	0.00	0	0		
									point7	7	326.0	420.0	130.00	0.00	0.00	0	0		
									point8	8	296.0	517.0	130.00	0.00	0.00	0	0		
									point9	9	416.0	556.0	130.00	0.00	0.00	0	0		
									point10	10	447.0	459.0	130.00	0.00					
Lot 3	W	0.00	99.99	0.00				0.00	point11	11	373.0	588.0	126.00	0.00	0.00	0	0		
									point12	12	276.0	555.0	126.00	0.00	0.00	0	0		
									point13	13	230.0	694.0	126.00	0.00	0.00	0	0		
									point14	14	328.0	727.0	126.00	0.00	0.00	0	0		
									point15	15	373.0	589.0	126.00	0.00					
Lot 4	W	0.00	99.99	0.00				0.00	point16	16	522.0	617.0	131.00	0.00	0.00	0	0		
									point17	17	587.0	642.0	131.00	0.00	0.00	0	0		
									point18	18	533.0	787.0	131.00	0.00	0.00	0	0		
									point19	19	467.0	763.0	131.00	0.00	0.00	0	0		
									point20	20	522.0	618.0	131.00	0.00					
Lot 5	W	0.00	99.99	0.00				0.00	point21	21	668.1	420.0	126.00	0.00	0.00	0	0		
									point22	22	669.0	419.0	126.00	0.00	0.00	0	0		
									point23	23	621.0	547.0	126.00	0.00	0.00	0	0		
									point24	24	556.0	523.0	126.00	0.00	0.00	0	0		
									point25	25	556.0	521.0	126.00	0.00					
Lot 1 Wall	W	0.00	99.99	0.00				0.00	point26	26	441.9	297.8	125.00	0.00	0.00	0	0		
									point27	27	292.9	251.8	125.00	0.00					
Lot 5 Wall	W	0.00	99.99	0.00				0.00	point28	28	685.0	394.0	126.00	0.00	0.00	0	0		
									point30	30	656.0	383.0	126.00	0.00	0.00	0	0		
									point29	29	597.0	428.0	126.00	0.00					
Lot 5 House	W	0.00	99.99	0.00				0.00	point36	36	622.6	413.0	126.00	0.00	0.00	0	0		
									point37	37	640.7	419.5	126.00	0.00	0.00	0	0		
									point38	38	630.1	443.3	126.00	0.00	0.00	0	0		
									point39	39	642.4	447.7	126.00	0.00	0.00	0	0		
									point40	40	647.1	435.5	126.00	0.00	0.00	0	0		

									point41	41	659.5	440.2	126.00	0.00	0.00	0	0		
									point42	42	624.2	529.1	126.00	0.00	0.00	0	0		
									point43	43	595.5	517.6	126.00	0.00	0.00	0	0		
									point44	44	607.6	488.6	126.00	0.00	0.00	0	0		
									point45	45	587.9	481.8	126.00	0.00	0.00	0	0		
									point46	46	622.4	413.2	126.00	0.00					

ISE 20 December 2007
Case van Genuchten TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: 07-052 Las Mansiones
RUN: 1st Floor Unmitigated

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Sweetwater Westbound Ln 2	point12	12	259	45	11	45	5	45	0	0	0	0
	point11	11	259	45	11	45	5	45	0	0	0	0
	point10	10	259	45	11	45	5	45	0	0	0	0
	point9	9	259	45	11	45	5	45	0	0	0	0
	point8	8	259	45	11	45	5	45	0	0	0	0
	point7	7	259	45	11	45	5	45	0	0	0	0
	point6	6	259	45	11	45	5	45	0	0	0	0
	point5	5	259	45	11	45	5	45	0	0	0	0
	point4	4	259	45	11	45	5	45	0	0	0	0
	point3	3	259	45	11	45	5	45	0	0	0	0
	point2	2	259	45	11	45	5	45	0	0	0	0
	point1	1										
Sweetwater Westbound Ln 1	point13	13	259	45	11	45	5	45	0	0	0	0
	point14	14	259	45	11	45	5	45	0	0	0	0
	point15	15	259	45	11	45	5	45	0	0	0	0
	point16	16	259	45	11	45	5	45	0	0	0	0
	point17	17	259	45	11	45	5	45	0	0	0	0
	point18	18	259	45	11	45	5	45	0	0	0	0
	point19	19	259	45	11	45	5	45	0	0	0	0
	point20	20	259	45	11	45	5	45	0	0	0	0
	point21	21	259	45	11	45	5	45	0	0	0	0
	point22	22	259	45	11	45	5	45	0	0	0	0
	point23	23	259	45	11	45	5	45	0	0	0	0

	point24	24										
Sweetwater Eastbound Ln 1	point36	36	259	45	11	45	5	45	0	0	0	0
	point35	35	259	45	11	45	5	45	0	0	0	0
	point34	34	259	45	11	45	5	45	0	0	0	0
	point33	33	259	45	11	45	5	45	0	0	0	0
	point32	32	259	45	11	45	5	45	0	0	0	0
	point31	31	259	45	11	45	5	45	0	0	0	0
	point30	30	259	45	11	45	5	45	0	0	0	0
	point29	29	259	45	11	45	5	45	0	0	0	0
	point28	28	259	45	11	45	5	45	0	0	0	0
	point27	27	259	45	11	45	5	45	0	0	0	0
	point26	26	259	45	11	45	5	45	0	0	0	0
	point25	25										
Sweetwater Eastbound Ln 2	point48	48	259	45	11	45	5	45	0	0	0	0
	point47	47	259	45	11	45	5	45	0	0	0	0
	point46	46	259	45	11	45	5	45	0	0	0	0
	point45	45	259	45	11	45	5	45	0	0	0	0
	point44	44	259	45	11	45	5	45	0	0	0	0
	point43	43	259	45	11	45	5	45	0	0	0	0
	point42	42	259	45	11	45	5	45	0	0	0	0
	point41	41	259	45	11	45	5	45	0	0	0	0
	point40	40	259	45	11	45	5	45	0	0	0	0
	point39	39	259	45	11	45	5	45	0	0	0	0
	point38	38	259	45	11	45	5	45	0	0	0	0
	point37	37										

All Selected		20	0.0	0.0	0.0							
All Impacted		0	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

ISE
Case van Genuchten

20 December 2007
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 07-052 Las Mansiones
RUN: 1st Floor Mitigated
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Lot 1 W	2	1	0.0	53.7	66	53.7	10	----	53.7	0.0	8	-8.0
Lot 1 S	3	1	0.0	56.7	66	56.7	10	----	56.7	0.0	8	-8.0
Lot 1 E	4	1	0.0	58.1	66	58.1	10	----	58.1	0.0	8	-8.0
Lot 1 N	5	1	0.0	51.4	66	51.4	10	----	51.4	0.0	8	-8.0
Lot 2 W	6	1	0.0	49.1	66	49.1	10	----	49.1	0.0	8	-8.0
Lot 2 S	7	1	0.0	53.7	66	53.7	10	----	53.7	0.0	8	-8.0
Lot 2 E	8	1	0.0	52.4	66	52.4	10	----	52.4	0.0	8	-8.0
Lot 2 N	9	1	0.0	46.6	66	46.6	10	----	46.6	0.0	8	-8.0
Lot 3 W	10	1	0.0	45.8	66	45.8	10	----	45.8	0.0	8	-8.0
Lot 3 S	11	1	0.0	49.3	66	49.3	10	----	49.3	0.0	8	-8.0
Lot 3 E	12	1	0.0	46.6	66	46.6	10	----	46.6	0.0	8	-8.0
Lot 3 N	13	1	0.0	45.0	66	45.0	10	----	45.0	0.0	8	-8.0
Lot 4 W	14	1	0.0	46.5	66	46.5	10	----	46.5	0.0	8	-8.0
Lot 4 S	15	1	0.0	48.5	66	48.5	10	----	48.5	0.0	8	-8.0
Lot 4 E	16	1	0.0	45.0	66	45.0	10	----	45.0	0.0	8	-8.0
Lot 4 N	17	1	0.0	41.9	66	41.9	10	----	41.9	0.0	8	-8.0
Lot 5 W	18	1	0.0	56.1	66	56.1	10	----	56.1	0.0	8	-8.0
Lot 5 S	19	1	0.0	52.6	66	52.6	10	----	52.6	0.0	8	-8.0
Lot 5 E	20	1	0.0	53.3	66	53.3	10	----	53.3	0.0	8	-8.0
Lot 5 N	21	1	0.0	51.3	66	51.3	10	----	51.3	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB

All Selected		20	0.0	0.0	0.0							
All Impacted		0	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

ISE			**20 December 2007**	
Case van Genuchten			**TNM 2.5**	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:	**07-052 Las Mansiones**			
RUN:	**1st Floor Mitigated**			
Terrain Line	**Points**			
Name	**No.**	**Coordinates (ground)**		
		X	**Y**	**Z**
		ft	ft	ft
Lot 1 Terrain	1	339.0	270.0	124.00
	2	515.1	320.9	124.00
	3	483.0	444.0	124.00
	4	297.0	383.0	124.00
	5	339.0	271.0	124.00
Road Edge	6	234.0	212.0	118.00
	7	328.0	255.0	118.00
	8	536.0	314.0	118.00
	9	694.0	372.0	118.00
	10	800.0	427.0	120.00

ISE 20 December 2007
Case van Genuchten TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: 07-052 Las Mansiones
RUN: 1st Floor Mitigated

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Sweetwater Westbound Ln 2	12.0	point12	12	824.0	356.0	110.00				Average	
		point11	11	803.0	350.0	111.00				Average	
		point10	10	758.0	336.0	113.00				Average	
		point9	9	669.0	307.0	115.00				Average	
		point8	8	608.0	288.0	116.00				Average	
		point7	7	603.0	287.0	116.00				Average	
		point6	6	465.0	243.0	115.00				Average	
		point5	5	398.0	222.0	113.00				Average	
		point4	4	331.0	202.0	112.00				Average	
		point3	3	279.0	188.0	111.00				Average	
		point2	2	230.0	174.0	109.00				Average	
		point1	1	199.0	166.0	108.00					
Sweetwater Westbound Ln 1	12.0	point13	13	824.0	342.0	110.00				Average	
		point14	14	803.0	336.0	111.00				Average	
		point15	15	758.0	322.0	113.00				Average	
		point16	16	669.0	293.0	115.00				Average	
		point17	17	608.0	274.0	116.00				Average	
		point18	18	603.0	273.0	116.00				Average	
		point19	19	465.0	229.0	115.00				Average	
		point20	20	398.0	208.0	113.00				Average	
		point21	21	331.0	188.0	112.00				Average	
		point22	22	279.0	174.0	111.00				Average	
		point23	23	230.0	160.0	109.00				Average	
		point24	24	199.0	152.0	108.00					
Sweetwater Eastbound Ln 1	12.0	point36	36	199.0	138.0	108.00				Average	

		point35	35	230.0	146.0	109.00				Average	
		point34	34	279.0	160.0	111.00				Average	
		point33	33	331.0	174.0	112.00				Average	
		point32	32	398.0	194.0	113.00				Average	
		point31	31	465.0	215.0	115.00				Average	
		point30	30	603.0	259.0	116.00				Average	
		point29	29	608.0	260.0	116.00				Average	
		point28	28	669.0	279.0	115.00				Average	
		point27	27	758.0	308.0	113.00				Average	
		point26	26	803.0	322.0	111.00				Average	
		point25	25	824.0	328.0	110.00					
Sweetwater Eastbound Ln 2	12.0	point48	48	199.0	124.0	108.00				Average	
		point47	47	230.0	132.0	109.00				Average	
		point46	46	279.0	146.0	111.00				Average	
		point45	45	331.0	160.0	112.00				Average	
		point44	44	398.0	180.0	113.00				Average	
		point43	43	465.0	201.0	115.00				Average	
		point42	42	603.0	245.0	116.00				Average	
		point41	41	608.0	246.0	116.00				Average	
		point40	40	669.0	265.0	115.00				Average	
		point39	39	758.0	294.0	113.00				Average	
		point38	38	803.0	308.0	111.00				Average	
		point37	37	824.0	314.0	110.00					

ISE 20 December 2007
Case van Genuchten TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: 07-052 Las Mansiones
RUN: 1st Floor Mitigated

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Lot 1 W	2	1	316.6	331.2	125.00	5.00	0.00	66	10.0	8.0	Y
Lot 1 S	3	1	403.4	306.3	125.00	5.00	0.00	66	10.0	8.0	Y
Lot 1 E	4	1	456.0	376.0	125.00	5.00	0.00	66	10.0	8.0	Y
Lot 1 N	5	1	368.0	401.0	125.00	5.00	0.00	66	10.0	8.0	
Lot 2 W	6	1	294.0	469.0	129.00	5.00	0.00	66	10.0	8.0	
Lot 2 S	7	1	388.0	433.0	129.00	5.00	0.00	66	10.0	8.0	
Lot 2 E	8	1	441.0	506.0	129.00	5.00	0.00	66	10.0	8.0	
Lot 2 N	9	1	357.0	543.0	129.00	5.00	0.00	66	10.0	8.0	
Lot 3 W	10	1	239.0	629.0	136.00	5.00	0.00	66	10.0	8.0	
Lot 3 S	11	1	325.0	568.0	136.00	5.00	0.00	66	10.0	8.0	
Lot 3 E	12	1	357.0	661.0	136.00	5.00	0.00	66	10.0	8.0	
Lot 3 N	13	1	275.0	732.0	136.00	5.00	0.00	66	10.0	8.0	
Lot 4 W	14	1	495.0	677.0	130.00	5.00	0.00	66	10.0	8.0	
Lot 4 S	15	1	554.0	625.0	130.00	5.00	0.00	66	10.0	8.0	
Lot 4 E	16	1	565.0	706.0	130.00	5.00	0.00	66	10.0	8.0	
Lot 4 N	17	1	499.0	780.0	130.00	5.00	0.00	66	10.0	8.0	
Lot 5 W	18	1	572.0	466.0	126.00	5.00	0.00	66	10.0	8.0	Y
Lot 5 S	19	1	636.0	403.0	126.00	5.00	0.00	66	10.0	8.0	Y
Lot 5 E	20	1	646.0	487.0	126.00	5.00	0.00	66	10.0	8.0	Y
Lot 5 N	21	1	586.0	540.0	126.00	5.00	0.00	66	10.0	8.0	

ISE 20 December 2007
Case van Genuchten TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: 07-052 Las Mansiones
RUN: 1st Floor Mitigated

Barrier									Points									
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment			
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht Perturbs			On
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?
				Area	Vol.			Length							ment			
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft			
Lot 1	W	0.00	99.99	0.00				0.00	point1	1	338.0	290.0	125.00	0.00	0.00	0	0	
									point2	2	311.0	376.0	125.00	0.00	0.00	0	0	
									point3	3	437.0	417.0	125.00	0.00	0.00	0	0	
									point4	4	465.0	329.0	125.00	0.00	0.00	0	0	
									point5	5	339.0	290.0	125.00	0.00				
Lot 2	W	0.00	99.99	0.00				0.00	point6	6	448.0	459.0	130.00	0.00	0.00	0	0	
									point7	7	326.0	420.0	130.00	0.00	0.00	0	0	
									point8	8	296.0	517.0	130.00	0.00	0.00	0	0	
									point9	9	416.0	556.0	130.00	0.00	0.00	0	0	
									point10	10	447.0	459.0	130.00	0.00				
Lot 3	W	0.00	99.99	0.00				0.00	point11	11	373.0	588.0	126.00	0.00	0.00	0	0	
									point12	12	276.0	555.0	126.00	0.00	0.00	0	0	
									point13	13	230.0	694.0	126.00	0.00	0.00	0	0	
									point14	14	328.0	727.0	126.00	0.00	0.00	0	0	
									point15	15	373.0	589.0	126.00	0.00				
Lot 4	W	0.00	99.99	0.00				0.00	point16	16	522.0	617.0	131.00	0.00	0.00	0	0	
									point17	17	587.0	642.0	131.00	0.00	0.00	0	0	
									point18	18	533.0	787.0	131.00	0.00	0.00	0	0	
									point19	19	467.0	763.0	131.00	0.00	0.00	0	0	
									point20	20	522.0	618.0	131.00	0.00				
Lot 5	W	0.00	99.99	0.00				0.00	point21	21	668.1	420.0	126.00	0.00	0.00	0	0	
									point22	22	669.0	419.0	126.00	0.00	0.00	0	0	
									point23	23	621.0	547.0	126.00	0.00	0.00	0	0	
									point24	24	556.0	523.0	126.00	0.00	0.00	0	0	
									point25	25	556.0	521.0	126.00	0.00				
Lot 1 Wall	W	0.00	99.99	0.00				0.00	point26	26	441.9	297.8	125.00	6.00	0.00	0	0	
									point27	27	292.9	251.8	125.00	6.00				
Lot 5 Wall	W	0.00	99.99	0.00				0.00	point28	28	685.0	394.0	126.00	6.00	0.00	0	0	
									point30	30	656.0	383.0	126.00	6.00	0.00	0	0	
									point29	29	597.0	428.0	126.00	6.00				
Lot 5 House	W	0.00	99.99	0.00				0.00	point36	36	622.6	413.0	126.00	0.00	0.00	0	0	
									point37	37	640.7	419.5	126.00	0.00	0.00	0	0	
									point38	38	630.1	443.3	126.00	0.00	0.00	0	0	
									point39	39	642.4	447.7	126.00	0.00	0.00	0	0	
									point40	40	647.1	435.5	126.00	0.00	0.00	0	0	

									point41	41	659.5	440.2	126.00	0.00	0.00	0	0		
									point42	42	624.2	529.1	126.00	0.00	0.00	0	0		
									point43	43	595.5	517.6	126.00	0.00	0.00	0	0		
									point44	44	607.6	488.6	126.00	0.00	0.00	0	0		
									point45	45	587.9	481.8	126.00	0.00	0.00	0	0		
									point46	46	622.4	413.2	126.00	0.00					

ISE 20 December 2007
Case van Genuchten TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: 07-052 Las Mansiones
RUN: 1st Floor Mitigated

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Sweetwater Westbound Ln 2	point12	12	259	45	11	45	5	45	0	0	0	0
	point11	11	259	45	11	45	5	45	0	0	0	0
	point10	10	259	45	11	45	5	45	0	0	0	0
	point9	9	259	45	11	45	5	45	0	0	0	0
	point8	8	259	45	11	45	5	45	0	0	0	0
	point7	7	259	45	11	45	5	45	0	0	0	0
	point6	6	259	45	11	45	5	45	0	0	0	0
	point5	5	259	45	11	45	5	45	0	0	0	0
	point4	4	259	45	11	45	5	45	0	0	0	0
	point3	3	259	45	11	45	5	45	0	0	0	0
	point2	2	259	45	11	45	5	45	0	0	0	0
	point1	1										
Sweetwater Westbound Ln 1	point13	13	259	45	11	45	5	45	0	0	0	0
	point14	14	259	45	11	45	5	45	0	0	0	0
	point15	15	259	45	11	45	5	45	0	0	0	0
	point16	16	259	45	11	45	5	45	0	0	0	0
	point17	17	259	45	11	45	5	45	0	0	0	0
	point18	18	259	45	11	45	5	45	0	0	0	0
	point19	19	259	45	11	45	5	45	0	0	0	0
	point20	20	259	45	11	45	5	45	0	0	0	0
	point21	21	259	45	11	45	5	45	0	0	0	0
	point22	22	259	45	11	45	5	45	0	0	0	0
	point23	23	259	45	11	45	5	45	0	0	0	0

	point24	24										
Sweetwater Eastbound Ln 1	point36	36	259	45	11	45	5	45	0	0	0	0
	point35	35	259	45	11	45	5	45	0	0	0	0
	point34	34	259	45	11	45	5	45	0	0	0	0
	point33	33	259	45	11	45	5	45	0	0	0	0
	point32	32	259	45	11	45	5	45	0	0	0	0
	point31	31	259	45	11	45	5	45	0	0	0	0
	point30	30	259	45	11	45	5	45	0	0	0	0
	point29	29	259	45	11	45	5	45	0	0	0	0
	point28	28	259	45	11	45	5	45	0	0	0	0
	point27	27	259	45	11	45	5	45	0	0	0	0
	point26	26	259	45	11	45	5	45	0	0	0	0
	point25	25										
Sweetwater Eastbound Ln 2	point48	48	259	45	11	45	5	45	0	0	0	0
	point47	47	259	45	11	45	5	45	0	0	0	0
	point46	46	259	45	11	45	5	45	0	0	0	0
	point45	45	259	45	11	45	5	45	0	0	0	0
	point44	44	259	45	11	45	5	45	0	0	0	0
	point43	43	259	45	11	45	5	45	0	0	0	0
	point42	42	259	45	11	45	5	45	0	0	0	0
	point41	41	259	45	11	45	5	45	0	0	0	0
	point40	40	259	45	11	45	5	45	0	0	0	0
	point39	39	259	45	11	45	5	45	0	0	0	0
	point38	38	259	45	11	45	5	45	0	0	0	0
	point37	37										

ISE
Case van Genuchten

20 December 2007
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 07-052 Las Mansiones
RUN: 2nd Floor Mitigated
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Lot 1 W	2	1	0.0	57.9	66	57.9	10	----	57.9	0.0	8	-8.0
Lot 1 S	3	1	0.0	64.9	66	64.9	10	----	64.9	0.0	8	-8.0
Lot 1 E	4	1	0.0	61.0	66	61.0	10	----	61.0	0.0	8	-8.0
Lot 1 N	5	1	0.0	56.2	66	56.2	10	----	56.2	0.0	8	-8.0
Lot 2 W	6	1	0.0	53.4	66	53.4	10	----	53.4	0.0	8	-8.0
Lot 2 S	7	1	0.0	56.4	66	56.4	10	----	56.4	0.0	8	-8.0
Lot 2 E	8	1	0.0	55.0	66	55.0	10	----	55.0	0.0	8	-8.0
Lot 2 N	9	1	0.0	51.9	66	51.9	10	----	51.9	0.0	8	-8.0
Lot 3 W	10	1	0.0	49.4	66	49.4	10	----	49.4	0.0	8	-8.0
Lot 3 S	11	1	0.0	51.9	66	51.9	10	----	51.9	0.0	8	-8.0
Lot 3 E	12	1	0.0	49.6	66	49.6	10	----	49.6	0.0	8	-8.0
Lot 3 N	13	1	0.0	47.7	66	47.7	10	----	47.7	0.0	8	-8.0
Lot 4 W	14	1	0.0	49.9	66	49.9	10	----	49.9	0.0	8	-8.0
Lot 4 S	15	1	0.0	51.9	66	51.9	10	----	51.9	0.0	8	-8.0
Lot 4 E	16	1	0.0	49.4	66	49.4	10	----	49.4	0.0	8	-8.0
Lot 4 N	17	1	0.0	46.7	66	46.7	10	----	46.7	0.0	8	-8.0
Lot 5 W	18	1	0.0	58.2	66	58.2	10	----	58.2	0.0	8	-8.0
Lot 5 S	19	1	0.0	63.4	66	63.4	10	----	63.4	0.0	8	-8.0
Lot 5 E	20	1	0.0	57.4	66	57.4	10	----	57.4	0.0	8	-8.0
Lot 5 N	21	1	0.0	54.5	66	54.5	10	----	54.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB

All Selected		20	0.0	0.0	0.0							
All Impacted		0	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

ISE			**20 December 2007**	
Case van Genuchten			**TNM 2.5**	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:	**07-052 Las Mansiones**			
RUN:	**2nd Floor Mitigated**			
Terrain Line	**Points**			
Name	**No.**	**Coordinates (ground)**		
		X	**Y**	**Z**
		ft	ft	ft
Lot 1 Terrain	1	339.0	270.0	124.00
	2	515.1	320.9	124.00
	3	483.0	444.0	124.00
	4	297.0	383.0	124.00
	5	339.0	271.0	124.00
Road Edge	6	234.0	212.0	118.00
	7	328.0	255.0	118.00
	8	536.0	314.0	118.00
	9	694.0	372.0	118.00
	10	800.0	427.0	120.00

ISE 20 December 2007
Case van Genuchten TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: 07-052 Las Mansiones
RUN: 2nd Floor Mitigated

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway		Points					Flow Control			Segment	
Name	Width	Name	No.	Coordinates (pavement) X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Sweetwater Westbound Ln 2	12.0	point12	12	824.0	356.0	110.00				Average	
		point11	11	803.0	350.0	111.00				Average	
		point10	10	758.0	336.0	113.00				Average	
		point9	9	669.0	307.0	115.00				Average	
		point8	8	608.0	288.0	116.00				Average	
		point7	7	603.0	287.0	116.00				Average	
		point6	6	465.0	243.0	115.00				Average	
		point5	5	398.0	222.0	113.00				Average	
		point4	4	331.0	202.0	112.00				Average	
		point3	3	279.0	188.0	111.00				Average	
		point2	2	230.0	174.0	109.00				Average	
		point1	1	199.0	166.0	108.00					
Sweetwater Westbound Ln 1	12.0	point13	13	824.0	342.0	110.00				Average	
		point14	14	803.0	336.0	111.00				Average	
		point15	15	758.0	322.0	113.00				Average	
		point16	16	669.0	293.0	115.00				Average	
		point17	17	608.0	274.0	116.00				Average	
		point18	18	603.0	273.0	116.00				Average	
		point19	19	465.0	229.0	115.00				Average	
		point20	20	398.0	208.0	113.00				Average	
		point21	21	331.0	188.0	112.00				Average	
		point22	22	279.0	174.0	111.00				Average	
		point23	23	230.0	160.0	109.00				Average	
		point24	24	199.0	152.0	108.00					
Sweetwater Eastbound Ln 1	12.0	point36	36	199.0	138.0	108.00				Average	

		point35	35	230.0	146.0	109.00				Average	
		point34	34	279.0	160.0	111.00				Average	
		point33	33	331.0	174.0	112.00				Average	
		point32	32	398.0	194.0	113.00				Average	
		point31	31	465.0	215.0	115.00				Average	
		point30	30	603.0	259.0	116.00				Average	
		point29	29	608.0	260.0	116.00				Average	
		point28	28	669.0	279.0	115.00				Average	
		point27	27	758.0	308.0	113.00				Average	
		point26	26	803.0	322.0	111.00				Average	
		point25	25	824.0	328.0	110.00					
Sweetwater Eastbound Ln 2	12.0	point48	48	199.0	124.0	108.00				Average	
		point47	47	230.0	132.0	109.00				Average	
		point46	46	279.0	146.0	111.00				Average	
		point45	45	331.0	160.0	112.00				Average	
		point44	44	398.0	180.0	113.00				Average	
		point43	43	465.0	201.0	115.00				Average	
		point42	42	603.0	245.0	116.00				Average	
		point41	41	608.0	246.0	116.00				Average	
		point40	40	669.0	265.0	115.00				Average	
		point39	39	758.0	294.0	113.00				Average	
		point38	38	803.0	308.0	111.00				Average	
		point37	37	824.0	314.0	110.00					

ISE 20 December 2007
Case van Genuchten TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: 07-052 Las Mansiones
RUN: 2nd Floor Mitigated

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Lot 1 W	2	1	316.6	331.2	125.00	15.00	0.00	66	10.0	8.0	Y
Lot 1 S	3	1	403.4	306.3	125.00	15.00	0.00	66	10.0	8.0	Y
Lot 1 E	4	1	456.0	376.0	125.00	15.00	0.00	66	10.0	8.0	Y
Lot 1 N	5	1	368.0	401.0	125.00	15.00	0.00	66	10.0	8.0	
Lot 2 W	6	1	294.0	469.0	129.00	15.00	0.00	66	10.0	8.0	
Lot 2 S	7	1	388.0	433.0	129.00	15.00	0.00	66	10.0	8.0	
Lot 2 E	8	1	441.0	506.0	129.00	15.00	0.00	66	10.0	8.0	
Lot 2 N	9	1	357.0	543.0	129.00	15.00	0.00	66	10.0	8.0	
Lot 3 W	10	1	239.0	629.0	136.00	15.00	0.00	66	10.0	8.0	
Lot 3 S	11	1	325.0	568.0	136.00	15.00	0.00	66	10.0	8.0	
Lot 3 E	12	1	357.0	661.0	136.00	15.00	0.00	66	10.0	8.0	
Lot 3 N	13	1	275.0	732.0	136.00	15.00	0.00	66	10.0	8.0	
Lot 4 W	14	1	495.0	677.0	130.00	15.00	0.00	66	10.0	8.0	
Lot 4 S	15	1	554.0	625.0	130.00	15.00	0.00	66	10.0	8.0	
Lot 4 E	16	1	565.0	706.0	130.00	15.00	0.00	66	10.0	8.0	
Lot 4 N	17	1	499.0	780.0	130.00	15.00	0.00	66	10.0	8.0	
Lot 5 W	18	1	572.0	466.0	126.00	15.00	0.00	66	10.0	8.0	Y
Lot 5 S	19	1	636.0	403.0	126.00	15.00	0.00	66	10.0	8.0	Y
Lot 5 E	20	1	646.0	487.0	126.00	15.00	0.00	66	10.0	8.0	Y
Lot 5 N	21	1	586.0	540.0	126.00	15.00	0.00	66	10.0	8.0	

ISE 20 December 2007
Case van Genuchten TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: 07-052 Las Mansiones
RUN: 2nd Floor Mitigated

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht	Perturbs		On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Lot 1	W	0.00	99.99	0.00				0.00	point1	1	338.0	290.0	125.00	0.00	0.00	0	0		
									point2	2	311.0	376.0	125.00	0.00	0.00	0	0		
									point3	3	437.0	417.0	125.00	0.00	0.00	0	0		
									point4	4	465.0	329.0	125.00	0.00	0.00	0	0		
									point5	5	339.0	290.0	125.00	0.00					
Lot 2	W	0.00	99.99	0.00				0.00	point6	6	448.0	459.0	130.00	0.00	0.00	0	0		
									point7	7	326.0	420.0	130.00	0.00	0.00	0	0		
									point8	8	296.0	517.0	130.00	0.00	0.00	0	0		
									point9	9	416.0	556.0	130.00	0.00	0.00	0	0		
									point10	10	447.0	459.0	130.00	0.00					
Lot 3	W	0.00	99.99	0.00				0.00	point11	11	373.0	588.0	126.00	0.00	0.00	0	0		
									point12	12	276.0	555.0	126.00	0.00	0.00	0	0		
									point13	13	230.0	694.0	126.00	0.00	0.00	0	0		
									point14	14	328.0	727.0	126.00	0.00	0.00	0	0		
									point15	15	373.0	589.0	126.00	0.00					
Lot 4	W	0.00	99.99	0.00				0.00	point16	16	522.0	617.0	131.00	0.00	0.00	0	0		
									point17	17	587.0	642.0	131.00	0.00	0.00	0	0		
									point18	18	533.0	787.0	131.00	0.00	0.00	0	0		
									point19	19	467.0	763.0	131.00	0.00	0.00	0	0		
									point20	20	522.0	618.0	131.00	0.00					
Lot 5	W	0.00	99.99	0.00				0.00	point21	21	668.1	420.0	126.00	0.00	0.00	0	0		
									point22	22	669.0	419.0	126.00	0.00	0.00	0	0		
									point23	23	621.0	547.0	126.00	0.00	0.00	0	0		
									point24	24	556.0	523.0	126.00	0.00	0.00	0	0		
									point25	25	556.0	521.0	126.00	0.00					
Lot 1 Wall	W	0.00	99.99	0.00				0.00	point26	26	441.9	297.8	125.00	6.00	0.00	0	0		
									point27	27	292.9	251.8	125.00	6.00					
Lot 5 Wall	W	0.00	99.99	0.00				0.00	point28	28	685.0	394.0	126.00	6.00	0.00	0	0		
									point30	30	656.0	383.0	126.00	6.00	0.00	0	0		
									point29	29	597.0	428.0	126.00	6.00					
Lot 5 House	W	0.00	99.99	0.00				0.00	point36	36	622.6	413.0	126.00	0.00	0.00	0	0		
									point37	37	640.7	419.5	126.00	0.00	0.00	0	0		
									point38	38	630.1	443.3	126.00	0.00	0.00	0	0		
									point39	39	642.4	447.7	126.00	0.00	0.00	0	0		
									point40	40	647.1	435.5	126.00	0.00	0.00	0	0		

									point41	41	659.5	440.2	126.00	0.00	0.00	0	0		
									point42	42	624.2	529.1	126.00	0.00	0.00	0	0		
									point43	43	595.5	517.6	126.00	0.00	0.00	0	0		
									point44	44	607.6	488.6	126.00	0.00	0.00	0	0		
									point45	45	587.9	481.8	126.00	0.00	0.00	0	0		
									point46	46	622.4	413.2	126.00	0.00					

ISE 20 December 2007
Case van Genuchten TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: 07-052 Las Mansiones
RUN: 2nd Floor Mitigated

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Sweetwater Westbound Ln 2	point12	12	259	45	11	45	5	45	0	0	0	0
	point11	11	259	45	11	45	5	45	0	0	0	0
	point10	10	259	45	11	45	5	45	0	0	0	0
	point9	9	259	45	11	45	5	45	0	0	0	0
	point8	8	259	45	11	45	5	45	0	0	0	0
	point7	7	259	45	11	45	5	45	0	0	0	0
	point6	6	259	45	11	45	5	45	0	0	0	0
	point5	5	259	45	11	45	5	45	0	0	0	0
	point4	4	259	45	11	45	5	45	0	0	0	0
	point3	3	259	45	11	45	5	45	0	0	0	0
	point2	2	259	45	11	45	5	45	0	0	0	0
	point1	1										
Sweetwater Westbound Ln 1	point13	13	259	45	11	45	5	45	0	0	0	0
	point14	14	259	45	11	45	5	45	0	0	0	0
	point15	15	259	45	11	45	5	45	0	0	0	0
	point16	16	259	45	11	45	5	45	0	0	0	0
	point17	17	259	45	11	45	5	45	0	0	0	0
	point18	18	259	45	11	45	5	45	0	0	0	0
	point19	19	259	45	11	45	5	45	0	0	0	0
	point20	20	259	45	11	45	5	45	0	0	0	0
	point21	21	259	45	11	45	5	45	0	0	0	0
	point22	22	259	45	11	45	5	45	0	0	0	0
	point23	23	259	45	11	45	5	45	0	0	0	0

	point24	24										
Sweetwater Eastbound Ln 1	point36	36	259	45	11	45	5	45	0	0	0	0
	point35	35	259	45	11	45	5	45	0	0	0	0
	point34	34	259	45	11	45	5	45	0	0	0	0
	point33	33	259	45	11	45	5	45	0	0	0	0
	point32	32	259	45	11	45	5	45	0	0	0	0
	point31	31	259	45	11	45	5	45	0	0	0	0
	point30	30	259	45	11	45	5	45	0	0	0	0
	point29	29	259	45	11	45	5	45	0	0	0	0
	point28	28	259	45	11	45	5	45	0	0	0	0
	point27	27	259	45	11	45	5	45	0	0	0	0
	point26	26	259	45	11	45	5	45	0	0	0	0
	point25	25										
Sweetwater Eastbound Ln 2	point48	48	259	45	11	45	5	45	0	0	0	0
	point47	47	259	45	11	45	5	45	0	0	0	0
	point46	46	259	45	11	45	5	45	0	0	0	0
	point45	45	259	45	11	45	5	45	0	0	0	0
	point44	44	259	45	11	45	5	45	0	0	0	0
	point43	43	259	45	11	45	5	45	0	0	0	0
	point42	42	259	45	11	45	5	45	0	0	0	0
	point41	41	259	45	11	45	5	45	0	0	0	0
	point40	40	259	45	11	45	5	45	0	0	0	0
	point39	39	259	45	11	45	5	45	0	0	0	0
	point38	38	259	45	11	45	5	45	0	0	0	0
	point37	37										